Review Comments
Source Control Evaluation Documents for the
Crawford Street Corporation Site
Portland, Oregon
Dated December 2, 2015

Submitted December 21, 2015

Following are United States Environmental Protection Agency (EPA) comments from review of the documents listed below for the Crawford Street Corporation (CSC) site:

1. Data Gap Analysis and Sampling and Analysis Plan Source Control Evaluation, Crawford Street, Portland, Oregon (SAP), dated October 29, 2015
2. Interim Source Control Measure Work Plan, Crawford Street, Portland, Oregon (ISCM Work Plan), dated December 2, 2015

The documents were prepared by the Bridgewater Group, Inc. on behalf of CSC. The CSC site is located at 8424 N Crawford St., Portland, Oregon, and is listed in the Oregon Department of Environmental Quality's (DEQ's) cleanup program as ECSI #2363. The site is at approximate river mile 6.3 east (RM 6.3E). The CSC site is used for industrial activities including metal forging, wood reclamation, and steel storage. However, the site is anticipated to be redeveloped in the coming years for commercial and residential use.

CSC performed a source control evaluation (SCE) data gaps analysis and developed the SAP for collection of data needed to address data gaps in the SCE. The DEQ has requested that CSC perform an interim source control measure (ISCM) to address the potential stormwater pathway before site redevelopment. The purpose of the ISCM is to reduce the amount of uncontrolled stormwater discharge from the site and provide some level of treatment to site stormwater. The Work Plan presents the general concept for the proposed ISCM, describes the anticipated design and construction issues and tasks, and estimates the general schedule for the ISCM.

SAP

General Comments

1. The applicable version of the Portland Harbor Preliminary Remediation Goals (PRGs) was released by EPA for stakeholder review in August 2015 as the Draft Final version. When using, evaluating, and reporting, CSC documents should verify and correct this reference and the PRG values used.
2. In reference to both the riverbank and stormwater pathway soils discussion in the SAP it is stated that 10x and 100x exceedances of the Portland Harbor PRGs and the JSCS Screening Level Values (SLVs) are modest. However, several orders of magnitude exceedances of the PRGs should not be considered modest. The data gaps assessment should be modified to recognize the significance of 10x and 100x exceedances of the PRGs.

3. There appears to be riverbank surface soil with significant exceedances of the PRG for PAHs and therefore more assessment of the riverbank erodibility pathway should be considered before concluding the riverbank is not significant pathway to the Willamette River. EPA's PRG for remedial action objective (RAO) 9 (12 ug/kg) for riverbank soil is exceeded by most of the riverbank surface soil samples collected at the site by 10 to 100x exceedance factors. EPA recommends more analysis be completed to characterize the erodibility of the riverbank. For example, the assessment of erodible soil in the SAP does not include a discussion on the topography of the bank, which could help illustrate the energy of runoff through the vegetated riverbank. Vegetation density and locations of areas of potential erosion should also be considered.

Specific Comments

1. Page 2, Erodible Soil – Riverbank, paragraph two: The location of the "limited areas of potential erosion" should be shown on Figure 3.
2. Page 4, Storm Water – Samples from seeps Seep-1 and Seep-2 represent stormwater that has infiltrated and migrated through the riverbank soil. The ISCM should reduce or eliminate the quantity of stormwater that infiltrates in this location, therefore limiting potential for contaminant leaching as the water migrates through the riverbank soils.
3. Page 6, Groundwater Pathway Sampling and Analysis - paragraph 1: A discussion of how seasonal groundwater depths will be determined must be included to facilitate selecting the appropriate well screen intervals in the field. The text states that there will be a 10-foot screen interval placed from approximately 25 to 35 feet below ground surface. The protocol, described in Appendix A, states that the well screen will be "placed at a depth anticipated to span the water table surface throughout seasonal fluctuations." The SAP does not identify the groundwater depth or seasonal range of groundwater depths at the two proposed well locations.
4. Page 6, Groundwater Pathway Sampling and Analysis – paragraph 1: A total of three groundwater monitoring wells should be installed so that information on the hydraulic gradient at the site can be determined. It is necessary to determine the hydraulic gradient to evaluate the groundwater pathway to the river.
5. Page 7, Storm Water Pathway Sampling and Analysis: The proposed methods for collecting stormwater samples from the roof drains should be modified to comply with Portland Harbor Joint Source Control Strategy (JSCS) guidance. This includes collection of four (4) samples from each location, with two of the samples being collected within the first 30 minutes of discharge (i.e., first flush). The remaining two samples should be collected within the first 3 hours of discharge. Collection of only two samples is not sufficient for properly characterizing stormwater discharges.
6. Figure 4, Storm Water Sample Locations: Figure 4 shows Seeps 3 and 4, which are not discussed in the text or included in Table 3. If there is data for Seeps 3 and 4 it should be included in Table 3 and discussed in the text.
7. Tables 1-3: There are several results that list 0 for the CPAHs (BaP TEF) result. This should be changed to an actual value based on the results of the individual PAHs or an assumed value for the PAHs that were not detected (e.g., the detection limit).

ISCM Work Plan

General Comments

1. EPA recommends that the Work Plan be revised to incorporate the information described in the specific comments below. To gain a better understanding of anticipated ISCM performance, further description of the proposed sizing methods should be provided. In addition, EPA recommends that the ISCM capture runoff from all stormwater basins to reduce risk of Willamette River recontamination from this site.
2. EPA requests the opportunity to review the ISCM design report before it is approved by DEQ.

Specific Comments

1. Page 1-2, Conceptual Scope and Layout of ISCM:
    a. This section of the Work Plan states that the ISCM is anticipated to include collection berms and vegetated swales to convey stormwater runoff. Vegetated swales are preferred over collection berms because of the treatment provided by these features, and implementation of collection berms as part of the ISCM should be limited.
    b. The rationale for capturing only 85 percent of the stormwater runoff leaving the site should be clearly described. It appears from Figures 3 and 4 that the ISCM will capture and treat stormwater runoff from Drainage Basins A, B, and E. However, the ICSM will not capture runoff from Drainage Basins C, D, and F. Based on stormwater data presented in the October 29, 2015 *Data Gap Analysis and Sampling and Analysis Plan* (SAP), pollutants have been observed in stormwater runoff from Drainage Basin C, and the ISCM should capture runoff from all drainage basins. The ISCM should also capture roof runoff unless the results of proposed stormwater sampling described in the SAP indicates that roof runoff does not pose a risk of Willamette River recontamination.
2. Page 2, Hydrology Analysis, Infiltration Tests, and Slope Stability Analysis: The Work Plan should clearly describe the method for sizing the vegetated swales and infiltration basin. It is assumed that the "Presumptive Approach" outlined in the 2014 Portland Stormwater Management Manual will be followed, but the anticipated benefit of the ISCM cannot be determined without a description of the sizing approach. Proposed methods for performing infiltration tests should also be described.
3. Page 2, Contaminated soil: The last sentence states that excavated soil that cannot be reused onsite will likely require sampling and offsite management in a solid waste facility. EPA recommends soil proposed for onsite reuse also undergo appropriate analytical testing to document no threat from the leaching to groundwater or erosion pathways.
4. Page 3, Maintenance, Monitoring, and Reporting: The effectiveness of the ISCM should be evaluated according to JSCS guidance. This includes collection of four (4) stormwater samples at all site discharge points and evaluating multiple lines of evidence including comparisons to SLVs, PRGs, and DEQ's rank-order stormwater curves.